

**Abstract**

[120] Certain exemplary embodiments provide a method for automatically optimizing an FTMS. The method can comprise a plurality of potential activities, some of which can be automatically, repeatedly, and/or nestedly performed, and some of which follow. A composite amplitude relating to an FTMS spectral output signal for each of a plurality of FTMS samples can be obtained, each of the samples having an substantially similar number of molecules. The FTMS variable can be changed repeatedly and the composite amplitude re-obtained until a value of an optimization parameter substantially converges, the optimization parameter a function of the composite amplitude.